

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-15. (Cancelled)

16. (New) A control apparatus for a vehicle having means for setting a target driving shaft torque according to operation by a driver of said vehicle or to an environmental operating conditions ahead of said vehicle, means for detecting a vehicle speed of said vehicle, means for controlling a transmission ratio of a transmission of said vehicle by using said target driving shaft torque and the vehicle speed, means for detecting operation of an accelerator pedal by the driver, and means for detecting a deceleration rate of said vehicle, said apparatus, wherein when the operation of the accelerator pedal is detected being zero,

an actual deceleration rate of said vehicle in a predetermined time period after the operation of the accelerator pedal becomes zero is detected, and the transmission ratio of said transmission is controlled by using at least detected actual deceleration rate.

17. (New) An apparatus according to claim 16, wherein

said vehicle has means for detecting a braking operation by the driver,
and

said apparatus detects the actual deceleration rate of said vehicle when the braking operation is increased in a predetermined time period after the operation of the accelerator pedal became zero, and controls the transmission ratio by using at least detected actual deceleration rate.

18. (New) An apparatus according to claim 16, wherein said apparatus determines a target critical rotational speed at an input shaft of said transmission, and a target transmission ratio is determined according to at least the target critical rotational speed.

19 (New) An apparatus according to claim 18, wherein if said target transmission ratio can not be realized due to a structural limitation in said transmission, a possible transmission ratio closest to said target transmission is chosen among possible transmission ratios which provide said vehicle with larger deceleration rate than a deceleration rate provided by said target transmission ratio in said target critical rotational speed.

20. (New) An apparatus according to claim 19, wherein said apparatus controls an engine of said vehicle to an actual driving shaft torque becomes coincide with said target driving shaft torque.

21. (New) An apparatus according to claim 16, wherein said apparatus further comprises means for calculating a running load of said vehicle, and controls the transmission ratio by using detected actual deceleration rate and said running load.

22. (New) An apparatus according to claim 18, wherein said vehicle has a switch for manually setting said target critical rotational speed, and said apparatus controls said transmission ratio by using said target critical rotational speed set by said switch,

23. (New) An apparatus according to claim 22, wherein said switch is disposed on a shift lever of the transmission,

24. (New) A method of controlling a vehicle wherein a target driving shaft torque is set according to operation by a driver of said vehicle or to an environmental operating conditions ahead of said vehicle, and a transmission ratio of a transmission of said vehicle is controlled by using said target driving shaft torque and the vehicle speed, wherein

when the operation of the accelerator pedal is detected being zero, an actual deceleration rate of said vehicle in a predetermined time period after the operation of the accelerator pedal becomes zero is detected, and the transmission ratio of said transmission is controlled by using at least detected actual deceleration rate.

25. (New) A method according to claim 24, wherein the actual deceleration rate of said vehicle is detected when the braking operation is increased in a predetermined time period after the operation of the accelerator pedal became zero, and the transmission ratio is controlled by using at least detected actual deceleration rate.

26. (New) A method according to claim 24, wherein a target critical rotational speed at an input shaft of said transmission is determined, and a target transmission ratio is determined according to at least the target critical rotational speed.

27. (New) A method according to claim 26, wherein if said target transmission ratio cannot be realized due to a structural limitation in said transmission, a possible transmission ratio closest to said target transmission is chosen among possible transmission ratios which provide said vehicle with larger deceleration rate than a deceleration rate provided by said target transmission ratio in said target critical rotational speed.

28. (New) A method according to claim 27, wherein an engine of said vehicle is controlled to make an actual driving shaft torque coincide with said target driving shaft torque.

29. (New) A method according to claim 24, wherein a running load of said vehicle is calculated, and the transmission ratio is controlled by using detected actual deceleration rate and said running load.

30. (New) A control apparatus for controlling a vehicle wherein a target driving shaft torque is set according to operation by a driver of said vehicle or to an environmental operating conditions ahead of said vehicle, and a transmission ratio of a transmission of said vehicle is controlled by using said target driving shaft torque and the vehicle speed, wherein

when the operation of the accelerator pedal is detected being zero, an actual deceleration rate of said vehicle in a predetermined time period after the operation of the accelerator pedal becomes zero is detected, and the transmission ratio of said transmission is controlled by using at least detected actual deceleration rate.

31. (New) A control apparatus according to claim 30, wherein the actual deceleration rate of said vehicle is detected when the braking operation is increased in a predetermined time period after the operation of the accelerator pedal became zero, and the transmission ratio is controlled by using at least detected actual deceleration rate.

32. (New) A control apparatus according to claim 31, wherein a target critical rotational speed at an input shaft of said transmission is determined, and a

target transmission ratio is determined according to at least the target critical rotational speed.

33. (New) A control apparatus according to claim 32, wherein if said target transmission ratio can not be realized due to a structural limitation in said transmission, a possible transmission ratio closest to said target transmission is chosen among possible transmission ratios which provide said vehicle with larger deceleration rate than a deceleration rate provided by said target transmission ratio in said target critical rotational speed.

34. (New) A control apparatus according to claim 33, wherein an engine of said vehicle is controlled to make an actual driving shaft torque coincide with said target driving shaft torque.

35. (New) A control apparatus according to claim 30, further comprises means for calculating a running load of said vehicle, and controls the transmission ratio by using detected actual deceleration rate and said running load.

36. (New) A control apparatus according to claim 32, wherein said vehicle has a switch for manually setting said target critical rotational speed, and said control apparatus controls said transmission ratio by using said target critical rotational speed set by said switch.

37. (New) A control apparatus according to claim 36 wherein said switch is disposed on a shift lever of the transmission.